Installation & Maintenance Instructions

2–WAY INTERNAL PILOT–OPERATED SOLENOID VALVES
NORMALLY CLOSED OPERATION — STEAM OR HOT WATER SERVICE
3/8″, 1/2″, 3/4″ OR 1″ NPT

Rebuild Kit
No. 61301600443
Form No.V7443

NOTICE: See separate solenoid installation and maintenance instructions for information on: Wiring, Solenoid Temperature, Cause of Improper Operation and Solenoid Replacement.

DESCRIPTION

These valves are 2–way normally closed, internal pilot operated solenoid valves designed for steam or hot water service. The valve body and bonnet are made of rugged forged brass. Valves are provided with a general purpose/watertight solenoid enclosure.

OPERATION

Normally Closed: Valve is closed when solenoid is de–energized; open when energized.

Note: No minimum operating pressure differential is required.

INSTALLATION

Check nameplate for correct catalog number, pressure, voltage, frequency, and service. Never apply incompatible fluids or exceed pressure rating of the valve. Installation and valve maintenance to be performed by qualified personnel.

⚠ CAUTION: Maximum operating pressure differentials are based on temperature–related material limitations. Therefore, do not use valves with a steam source of higher pressure than the nameplate maximum operating pressure differential. Also do not use a pressure reducing valve to reduce steam source to rated pressure because this would result in superheated steam of excessive temperature entering the valve.

Temperature Limitations And Pressure Ratings

For maximum valve ambient and fluid temperatures, refer to chart below. Check nameplate for maximum pressure rating.

Maximum Pressure Rating psi & Service (Maximum Operating Pressure Differential)	Maximum Ambient Temperature	Maximum Fluid Temperature
50 steam	125°F (51.7°C)	300°F (148.9°C)
150 steam	125°F (51.7°C)	365°F (185°C)
150 hot water	125°F (51.7°C)	210°F (98°C)

Future Service Considerations

Provision should be made for performing seat leakage, external leakage, and operational tests on the valve with a nonhazardous, noncombustible fluid after disassembly and reassembly.

Positioning

This valve is designed to perform properly when mounted in any position. However, for optimum life and performance, the solenoid should be mounted vertically and upright to reduce the possibility of foreign matter accumulating in the solenoid base sub–assembly area.

Piping

Connect piping or tubing to valve according to markings on valve body. Apply pipe compound sparingly to male pipe threads only. If applied to valve threads, the compound may enter the valve and cause operational difficulty. Avoid pipe strain by properly supporting and aligning piping. When tightening the pipe, do not use valve or solenoid as a lever. Locate wrenches applied to valve body or piping as close as possible to connection point.

⚠ CAUTION: To protect the solenoid valve, install a strainer or filter, suitable for the service involved, in the inlet side as close to the valve as possible. Clean periodically depending on service conditions.

MAINTENANCE

⚠ WARNING: To prevent the possibility of serious injury or property damage, turn off electrical power, depressurize valve, and vent fluid to a safe area before servicing the valve.

Note: It is not necessary to remove the valve from the pipeline for repairs.

Cleaning

All solenoid valves should be cleaned periodically. The time between cleanings will vary depending on the medium and service conditions. In general, if the voltage to the coil is correct, sluggish valve operation, excessive noise or leakage will indicate that cleaning is required. In the extreme case, faulty valve operation will occur and the valve may fail to open or close. Clean strainer or filter when cleaning the valve.

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Preventive Maintenance

- Keep the medium flowing through the valve as free from dirt and foreign material as possible.
- While in service, the valve should be operated at least once a month to ensure proper opening and closing.
- Depending on the medium and service conditions, periodic inspection of internal valve parts for damage or excessive wear is recommended. Thoroughly clean all parts. If parts are worn or damaged, install a complete rebuild kit.

Causes of Improper Operation

- **Incorrect Pressure:** Check valve pressure. Pressure to valve must be within range specified on nameplate.
- **Excessive Leakage:** Disassemble valve and clean all parts. If parts are worn or damaged, install a complete rebuild kit.

Valve Disassembly

1. Disassemble valve in an orderly fashion using exploded view for identification and placement of parts.
2. Remove solenoid, see separate instructions.
3. Unscrew solenoid base sub–assembly (1″ wrench) from valve bonnet.
4. Remove bonnet screws (13 mm wrench) with split lockwashers and valve bonnet with solenoid base gasket. A notch is provided on the side of the valve bonnet if prying is required to remove the bonnet.
5. Remove body gasket and core/cartridge assembly with seat gasket attached.
6. All parts are now accessible to clean or replace. If parts are worn or damaged, install a complete rebuild kit.

Valve Reassembly

1. Reassemble valve using exploded view for identification and placement of parts.
2. Lubricate the solenoid base gasket, body gasket and seat gasket with DOW CORNING® 200 Fluid lubricant or an equivalent high–grade silicone fluid.
3. Install seat gasket in groove in base of core/cartridge assembly.
4. Position core/cartridge assembly and body gasket in valve body.
5. Install solenoid base gasket in valve bonnet.
6. Position valve bonnet with solenoid base gasket on valve body.
7. Hand thread bonnet screws (with split lockwashers) into valve body as far as possible. Then using a 13 mm wrench, torque bonnet screws in a crisscross manner to 95 ± 10 in–lbs [10,7 ± 1,1 Nm].
8. Hand thread solenoid base sub–assembly into valve body as far as possible, then torque to 175 ± 25 in–lbs [19,8 ± 2,8 Nm] using a 1″ wrench.
9. Install solenoid, see separate instructions and make electrical hookup.

⚠ WARNING: To prevent the possibility of serious injury or property damage, check valve for proper operation before returning to service. Also perform internal seat and external leakage tests with a nonhazardous, noncombustible fluid.

10. Restore line pressure and electrical power supply to valve.
11. After maintenance is completed, operate the valve a few times to be sure of proper operation. A metallic *click* indicates the solenoid is operating.

ORDERING INFORMATION FOR REBUILD KITS

Parts marked with an asterisk (*) in the exploded view are supplied in Rebuild Kits. When Ordering Rebuild Kits for valves, order the Rebuild Kit number stamped on the valve nameplate. If the number of the kit is not visible, order by indicating the number of kits required, and the Catalog Number and Serial Number of the valve(s) for which they are intended.

Torque Chart

Part Name / Wrench Size	Torque Value Inch–pounds	Torque Value Newton Meters
Solenoid base sub–assembly / 1″ wrench	175 ± 25	19,8 ± 2,8
Bonnet screws / 13 mm wrench	95 ± 10	10,7 ± 1,1

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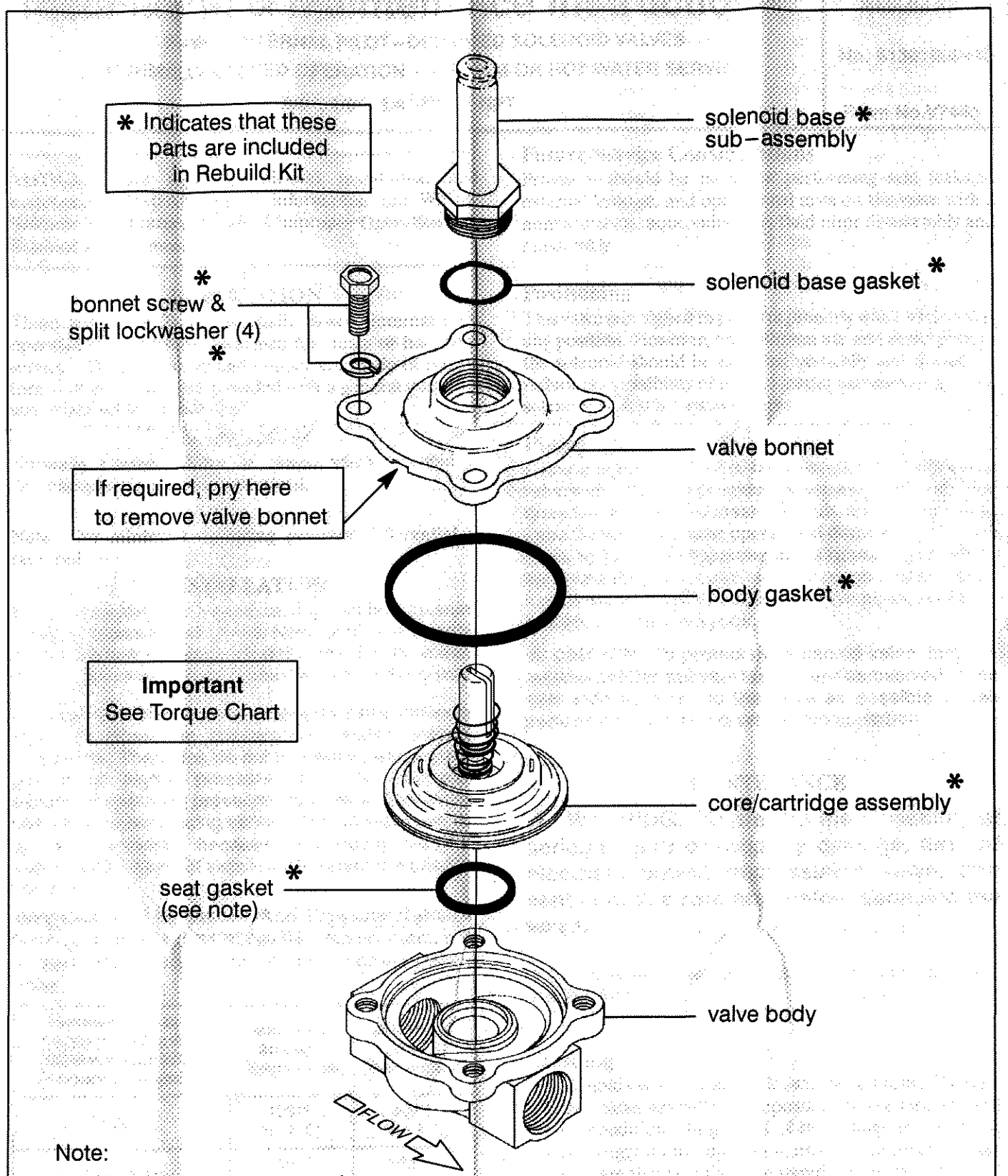
* Indicates that these parts are included in Rebuild Kit
solenoid base * sub-assembly
solenoid base gasket *
* bonnet screw & split lockwasher (4) *
valve bonnet
If required, pry here to remove valve bonnet
body gasket *
Important
See Torque Chart
core/cartridge assembly *
seat gasket * (see note)
valve body
FLOW

Note:
Install seat gasket in groove in base of core/cartridge assembly.

Figure 1. Valve without solenoid.

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